

REMARKS

Claims 1-14 and 16-26 are pending, with claims 1, 16, 18, 20, and 21 being independent. Claims 1-14, 21-23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,250,931 to Misawa et al. (Misawa) in view of U.S. Patent No. 5,818,068 to Sasaki et al. (Sasaki) and U.S. Patent No. 5,550,070 to Funai et al. (Funai). Claims 16-19, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of U.S. Patent No. 5,888,857 to Zhang et al. (Zhang). Claims 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of U.S. Patent No. 5,959,599 to Hirakata (Hirakata).

Regarding preliminary matters, Applicant notes the presence of an inconsistency with respect to the pending claims. Specifically, Applicant submits that the present application was filed with, in pertinent part, claims 1-21 and a Preliminary Amendment that (merely) added a cross-reference to related applications. Further, the Office Action Summary sheet indicates that claims 1-21 were pending at the time of mailing of the Office Action.

Despite the above facts, the Office Action itself considers and rejects claims 1-26. Neither Applicant's file nor the PTO's PAIR system reflects the filing of a second Preliminary Amendment. Therefore, Applicant is unsure as to how claims 22-26, which are listed above and which are substantively considered in the present Office Action, became of record in the present Application.

In order to resolve the above-described inconsistencies, Applicant includes claims 22-26 above, and requests that, if necessary, the corresponding excess claim fees of \$90.00 be charged to Deposit Account 06-1050. Additionally, Applicant requests clarification from the Examiner as to the status of claims 22-26 in the Examiner's next official communication.

Further regarding preliminary matters, Applicant thanks the Examiner for pointing out the typographical error in Applicant's priority claim, which is corrected by virtue of this Amendment.

Regarding the rejection of independent claim 1 as being unpatentable over Misawa in view of Sasaki and Funai, Applicant respectfully submits that claim 1 is neither disclosed nor suggested by any proper combination of the cited references. For example, by virtue of this Amendment, independent claim 1 is amended to include the limitations of claim 15, which has been cancelled.

Specifically, independent claim 1 now recites (with emphasis added):

1. (Currently Amended) A semiconductor device comprising:
a pixel matrix circuit including at least a plurality of source lines, a plurality of gate lines;
a driver circuit including at least a source line driver circuit for driving the source lines and a gate line driver circuit for driving the gate lines; and
a logic circuit for processing a signal required for driving the driver circuit and a signal including image information transmitted to the pixel matrix circuit,
wherein the pixel matrix circuit, the driver circuit and the logic circuit are disposed over a same substrate,
wherein the pixel matrix circuit, the driver circuit, and the logic circuit are constituted by a plurality of thin film transistors, each having an active layer comprising crystalline silicon, and
wherein the active layer of each of said plurality of thin film transistors comprise a plurality of rod-shaped crystals extending in one direction,
wherein the logic circuit includes one or more of a phase comparator, a LPF (low pass filter), a VCO (voltage controlled oscillator), a frequency divider, a horizontal scanning oscillator, a vertical scanning oscillator, a D/A converter, an I/O port, a differential amplifier, an operational amplifier, a comparator and a memory.

In rejecting claim 1, the Office Action acknowledges in paragraph 3 that Misawa "... fails to teach the usage of a logic circuit for processing a signal required for driving the driver circuit ..." The Office Action goes on to state that "... Sasaki et al. teaches an active matrix type display device that includes a negative logic product circuit ..."

Without acknowledging the propriety of the proposed combination of Misawa and Sasaki, Applicant submits that neither Misawa nor Sasaki (nor Funai, which is included for its alleged teaching of thin-film transistors comprising "... a plurality of rod-shaped crystals") discloses or properly suggests a "logic circuit" that includes one or more of the circuits recited in amended claim 1. Further, neither reference discloses or properly suggests such a logic circuit(s) being formed on the same substrate as the claimed pixel matrix circuit and driver circuit.

Inasmuch as amended claim 1 incorporates limitations of claim 15, Applicant notes that the Office Action addresses claim 15 by stating on page 5, lines 7-9 that, "usage of a phase comparator, low pass filter, etc, in a logic circuit, is well known in the art."

In response, Applicant respectfully submits that this statement is insufficient to establish a prima facie case of obviousness. For example, even if one or more of the recited circuits were used in the “logic circuit” of Sasaki, the Office Action fails to establish that the resulting logic circuit would have been formed in the same substrate as the claimed pixel matrix circuit and driver circuit. Further, the statement of alleged “usage ... in a logic circuit ...” fails to establish that an artisan of ordinary skill would have been motivated to use one or more of the recited circuits in the alleged “logic circuit” of Sasaki, as such a circuit is allegedly taught therein.

Accordingly, Applicant respectfully submits that independent claim 1, as well as dependent claims 2-14 and 22, are allowable. Further, each of the remaining independent claims 16, 18, 20, and 21 recite a logic circuit that includes one or more of a recited plurality of circuits, and that is formed over the same substrate as a recited pixel matrix circuit and driver circuit. Since (as discussed above) the cited references neither disclose nor properly suggest these features, as claimed, Applicant submits that independent claims 16, 18, 20, and 21 (as well as dependent claims 17, 19, and 23-26) are allowable. Since all pending claims are in condition for allowance, such action is requested in the Examiner's next official communication.


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Please charge \$90.00 for excess claim fees and \$110.00 for the One-Month Extension of Time fee (\$200.00 total), as well as any other charges or credits, to deposit account 06-1050.

Respectfully submitted,

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